

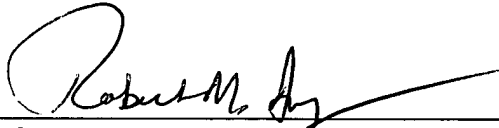
REMARKS

Favorable action is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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RMA:tas

MARKED-UP VERSION OF REPLACEMENT CLAIMS

1. (Amended) A selective, direct chemical, anti-carcinogenic action filtration method for filtering toxic products, in particular polycyclic aromatic hydrocarbons (PAH) such as benzo(a)pyrene (BaP) and nitrosamines, contained in the tobacco smoke of a tobacco product toeigarette, ~~said method comprising the step for~~ controlling the level of toxic products as compared with that of nicotine in order that the level reduction at the output of the filter is larger than a predetermined threshold, the method comprising steps of:

~~— (so that nicotine and taste aromas are preserved for the satisfaction and pleasure of smokers);~~

~~— in order to control the toxic product level as compared with that of nicotine, notably the level of polycyclic aromatic hydrocarbons (PAH) and nitrosamines, said method comprises the following steps:~~

~~— the step for~~

_____ scavenging all or part of the toxic products by means of an active ingredient acting on said toxic products according to molecular processes comparable to those according to which DNA and/or RNA of the human cell react with regards to said toxic products,

~~— the step for controlling the operating conditions of the filter by operating in a substantially non-aqueous medium and with a basic pH, preferably larger than or equal to 8, and~~

~~the step for adjusting the mass of the active ingredient so that it is larger than or equal to 0.1% of the mass of the cigarette filter and preferably larger than or equal to 1% of the mass of the filter.~~

2. (Amended) The method according to claim 1, such that said active ingredient consists of molecules formed by one or more nitrogen-containing cycles or nitrogen-containing heterocycles ~~and particularly nitrogen-containing heteroaromatic cycles, notably pentacycles or hexacycles or a combination of both;~~ said active ingredient existing as:

~~is a chain of said molecules, or and/or~~

~~said molecules bound in a common chemical arrangement to one fiber, or both, notably a fiber consisting of cellulose acetate.~~

3. (Amended) The method according to claim 2, such that the molecule of the active ingredient is selected from the group consisting of DNA, and/or RNA and/or a DNA or RNA derivatives thereof, ~~such as for example adenosine triphosphate (ATP), cyclic adenosine monophosphate (AMP), adenylecyclase.~~

4. (Amended) A cigarette filter for a tobacco product with a selective, direct chemical, anti-carcinogenic action, ~~particularly for filtering polycyclic aromatic hydrocarbons (PAH), notably benzo(a)pyrene (BaP), as well as nitrosamines, while preserving the nicotine level and taste aromas for the satisfaction and the pleasure of the smoker;~~

said filter including an active ingredient consisting of molecules formed by one or more nitrogen-containing cycles or nitrogen-containing heterocycles, ~~and in particular nitrogen-containing heteroaromatic cycles, notably pentacycles or hexacycles or a combination of both,~~

_____ said active ingredient ~~existing as~~ is
~~_____~~ a chain of said molecules, or ~~and/or~~
~~_____~~ said molecules bound to a fiber in a common chemical arrangement, or both, ~~notably a fiber consisting of cellulose acetate;~~

the mass of said nitrogen-containing cycles or heterocycles ~~and particularly nitrogen-containing heteroaromatic cycles~~ being at least equal to or larger than 0.1% of the total mass of the filter; and

said nitrogen-containing cycles or heterocycles ~~and particularly nitrogen-containing heteroaromatic cycles~~ operating in a substantially non-aqueous medium and with a basic pH .7

~~_____ (in such a way that it is thus possible to substantially reduce, at the output of the filter, the level of polycyclic aromatic hydrocarbons as compared with nicotine, notably by more than 90%, while preserving the nicotine level and the taste aromas for the satisfaction and pleasure of the smoker).~~

5. (Amended) The filter according to claim 4, such that the molecules are formed as a polymer, ~~in the broad sense.~~

6. (Amended) The filter according to ~~any of claims 4 or 5~~, such that the active ingredient exclusively consists of said molecules ~~and/or said polymers~~.

7. (Amended) The ~~cigarette~~ filter according to ~~any of claims 4 to 6~~, such that the mass of said nitrogen-containing cycles or heterocycles, ~~and particularly nitrogen-containing heteroaromatic cycles~~, is at least equal to or larger than 1% of the total mass of the filter.

8. (Amended) The ~~cigarette~~ filter according to ~~any of claims 4 to 7~~, such that the moisture content of the filter lies between 5 and 10%.

9. (Amended) The ~~cigarette~~ filter according to ~~any of claims 4 to 8~~, such that the pH of the filter is larger than 8.

10. (Amended) The ~~cigarette~~ filter according to ~~any of claims 4 to 9~~, such that the molecule of the active ingredient is selected from the group consisting of DNA, and/or RNA and/or a DNA or RNA derivatives thereof, ~~such as for example, adenosine triphosphate (ATP), cyclic adenosine monophosphate or adenyleylase, (in such a way that the carcinogenic toxic products contained in tobacco smoke, affecting the DNA and/or RNA molecules of the human cell, are scavenged by the filter according to molecular processes comparable to those according to which said toxic products act on DNA and/or RNA of the human cell)~~.

11. (Amended) The filter according to ~~any of claims 4 to 10~~, such that at least one function is added to the molecule of the active ingredient, on at least one of the nitrogen-containing cycles or nitrogen-containing heterocycles, the function being selected from a group consisting of~~comprising the following functions:~~

—— amine NH_2 ,

—— ketone, aldehyde,

—— methyl,

—— alkene, alkyl, and aryl. 7

~~—— is added to the molecule of the active ingredient, on at least one of the nitrogen-containing cycles or nitrogen-containing heterocycles, and particularly the nitrogen-containing heteroaromatic cycles.~~

12. (Amended) The filter according to ~~any of claims 4 to 11~~, such that one or more sugars, ~~such as ribose or deoxyribose, are~~ is added to at least one molecule of the active ingredient.

13. (Amended) The filter according to ~~any of claims 4 to 12~~, such that one or more acid functions and at least, notably pentavalent phosphoric acid (H_3PO_4) and/or another molecule including a trivalent phosphorus atom are added to at least one molecule of the active ingredient.

14. (Amended) The filter according to any of claims 4 ~~to 13~~, such that polymerization is performed ~~in the broad sense at the nitrogen-containing cycles, i.e.~~

~~nitrogen-containing heterocycles and particularly nitrogen-containing heteroaromatic cycles and/or added functions and/or acids and/or sugars.~~

15. (Amended) The filter according to ~~any of claims 4 to 14~~, such that the molecule of the active ingredient includes a halogen in a form of one or more atoms, and/or one or more molecules, and/or one or more radicals, or and/or one or more ions of a halogen, such as notably fluorine.

16. (Amended) The filter according to ~~any of claims 4 to 15~~, such that the molecule of the active ingredient ~~is in a halogen salt medium, notably in~~cludes a sodium fluoride (NaF) salt medium.

17. (Amended) The filter according to ~~any of claims 4 to 16~~, such that said fibers are partly halogenated, ~~such as notably by fluorine and/or are in a medium including atoms, molecules, radicals or ions of a halogen, such as notably fluorine.~~

18. (Amended) A method for manufacturing a filter including an active ingredient consisting of molecules formed by one or more nitrogen-containing cycles or nitrogen-containing heterocycles, said active ingredient being selected from the group consisting of a chain of said molecules and said molecules bound to a fiber in a common chemical arrangement; the mass of said nitrogen-containing cycles or heterocycles being at least equal to or larger than 0.1% of the total mass

of the filter; said nitrogen-containing cycles or heterocycles operating in a substantially non-aqueous medium and with a basic pH ~~including molecules and/or fibers according to any of claims 4 to 17,~~ said method comprising the step consisting of
 -___extruding and/or rolling together said molecules and said fibers.

Claim 19 is cancelled.

20. (Amended) The ~~filtration device~~filter according to claim ~~19~~4, such that said molecules and/or said fibers are incorporated in separate compartments.

21. (Amended) The ~~filtration device~~filter according to ~~any of claim 4 to 19 or 20,~~ such that said molecules and/or said fibers exist in a gelatinous, liquid or gaseous physical state.

Claims 22 and 23 are cancelled.

ABSTRACT OF THE DISCLOSURE

The method concerns a method for general use and more particularly used for tobacco products. The method uses in particular nitrogen-containing heterocycles such as DNA and RNA bases and complementarily polymer fibers. Said molecules and said fibers can partly halogenated, or in halogenated salt media. The halogen is preferably fluorine. Fluorine may be added to may be in the form of a medium of fluorinated salts such as NaF, KF, Na₂PO₃F. The filtering acts against the formation of human intracellular DNA or RNA adducts, while preserving the nicotine and the tobacco aromas.